



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 20 82 24 55

Classification of the application (IPC):
E21B 23/06, E21B 33/12, E21B 33/129, E21B 33/128

Technical fields searched (IPC):
E21B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X A	US 5749585 A (LEMBCKE JEFFREY J [US]) 12 May 1998 (1998-05-12) * column 2, line 47 - column 3, line 49; figures 1-4 *	1-4, 8-14 5-7, 15
A	US 2017356267 A1 (HAZEL PAUL [GB]) 14 December 2017 (2017-12-14) * claim 1; figures 1,2 *	1-15
A	CN 203130031 U (SHENYANG DAHUA MEASUREMENT CONTROL TECHNOLOGY CO LTD) 14 August 2013 (2013-08-14) * abstract *	1-15
A	US 8875799 B2 (SMITH DONALD RAY [US]; VALENCIA ANTHONY [US] ET AL.) 04 November 2014 (2014-11-04)	1-15
A	US 9518453 B2 (BAKER HUGHES INC [US]) 13 December 2016 (2016-12-13) * abstract; figures 1-3 *	1-15
A	US 2015315864 A1 (PATTON DAMIEN GERARD [GB]) 05 November 2015 (2015-11-05) * abstract; figures 1-6 *	1-15

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 01 December 2022	Examiner Strømmen, Henrik
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CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

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ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 01-12-2022
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5749585 A	12-05-1998	AU 723203 B2	17-08-2000
		CA 2192013 A1	19-06-1997
		GB 2308395 A	25-06-1997
		NO 313303 B1	09-09-2002
		US 5749585 A	12-05-1998
US 2017356267 A1	14-12-2017	AU 2017277726 A1	24-01-2019
		AU 2020204498 A1	23-07-2020
		BR 112018074344 A2	06-03-2019
		CA 3025601 A1	14-12-2017
		CN 109154185 A	04-01-2019
		DK 3469184 T3	13-12-2021
		EP 3255240 A1	13-12-2017
		EP 3469184 A1	17-04-2019
		RU 2018145641 A	13-07-2020
		US 2017356267 A1	14-12-2017
		WO 2017212004 A1	14-12-2017
CN 203130031 U	14-08-2013	NONE	
US 8875799 B2	04-11-2014	US 2013008673 A1	10-01-2013
		WO 2013009438 A2	17-01-2013
US 9518453 B2	13-12-2016	US 2015068733 A1	12-03-2015
		WO 2015034616 A1	12-03-2015
US 2015315864 A1	05-11-2015	BR 112016025643 A2	15-08-2017
		EP 3137723 A2	08-03-2017
		GB 2512506 A	01-10-2014
		US 2015315864 A1	05-11-2015
		US 2019383111 A1	19-12-2019
WO 2015166257 A2	05-11-2015		